Edgenuity™

Technology in Support of Personalized Learning

Overview

In 1998, the Federal Communications Commission (FCC) implemented the E-Rate program to make telecommunications and the Internet more affordable to schools and libraries. Administered by the Schools and Libraries Division of the Universal Service Administrative Company (USAC), the E-Rate program allocates $2.25 billion a year in discounts (20 to 90 percent, determined by economic need and geographic location) for wireless and long-distance telephone services, Internet access, web hosting, high-speed data lines, network connections, and connections within buildings (i.e., cabling, routers, wireless network components, maintenance, and basic technical support).[i] E-Rate dollars cannot be used to cover the cost of computers, instructional software, teacher training, or the salaries of technology staff. Funding for the E-Rate program is provided by telecommunications companies' customers, who pay a "universal service charge" on their monthly phone bill.

To obtain E-Rate discounts, schools and libraries must fill out a lengthy application each year. First, applicants must submit a document that describes the products and services for which they are seeking a discount and how these products and services align with educational goals and curricula. The description must include an implementation plan, as well as a detailed budget for maintaining the cost of the technology. Second, schools and libraries must go through a competitive bidding process to select a vendor to provide services. After the description of services is submitted and a vendor is selected, the USAC reviews the application and decides whether to subsidize the costs of products and services. If selected, the service provider or applicant is required to submit a bill or invoice to prove that services were delivered. Once the USAC confirms receipt, the school or telecommunications provider can be reimbursed at a discounted rate.

Why E-Rate Needs to Be Updated

While data show that the federal E-Rate program has been effective in bringing Internet access to schools and libraries, recent data indicate that the program could be updated to help schools better capitalize on technology. More specifically, the E-Rate program needs to be modernized to address the following:

- **Growing demand for online and blended learning:** Teachers nationwide are embracing online and blended learning models—a formal education program in which students learn, in part, through online delivery of content and, in part, in a brick-and-mortar instructional environment. Online and blended learning instructional models are among the fastest growing trends in education today. In 2002, for example, there were approximately 222,000 high school students enrolled in online learning. In 2010, nearly 1.4 million high school students were engaged in some kind of online or blended learning.[ii] What's more, research supports the conclusion that students can learn just as well from online or blended instruction as from traditional classes. [iii] Quality online and blended learning courses capitalize on a variety of instructional formats (i.e., video lectures, graphics displays, simulations, and closed captioned text) that can accommodate students with all learning styles. Further, explicit instruction with multimedia can promote deeper transfer of learning, critical thinking skills, connections to real-world knowledge, as well as targeted practice, remediation, and enrichment for students. The demand for online and blended learning has put a tremendous strain on the E-Rate program. In 2013, schools sought a little over $5 billion from the E-Rate program, but only $2.25

billion could be allocated. [iv] To accommodate growing demand for online and blended learning programs, the budget for the E-Rate program will need to be dramatically increased.

- **State Requirements for Online Learning:** Many states have implemented or are planning to implement online course requirements for high school students including Alabama, Arkansas, Florida, Michigan, North Carolina, and Virginia. In Florida, the legislation states, "At least one course … must be completed through online learning … an online course taken during grades 6-8 fulfills this requirement. This requirement shall be met through an online course offered by the Florida Virtual School, an online course offered by the high school, or an online dual enrollment course … A student enrolled in a full-time or part-time virtual instruction program under s.1002.45 meets this requirement."[v]

- **Data Requirements:** As data reporting requirements have increased at both the state and federal level, states and districts are finding it necessary to implement robust data management systems. These systems must be accessible to appropriate personnel (administrators, teachers, etc.) and must have the functionality to communicate at all levels within the district infrastructure and with the State Departments of Education. These requirements require access to high speed Internet in order to facilitate data exchange and allow districts to meet the accountability requirements.

- **In the Cloud:** Cloud computing is gaining traction in education as district and state education leaders look to integrate technology and maintain or cut costs. Cloud computing uses the Internet for functionality that used to be traditionally offered via the installation of software on computers or other devices. The use of cloud computing has many benefits for education including cost, flexibility, and accessibility. It brings students into the latest technological advances, preparing them for success as they enter the workforce. This movement again brings the focus on the need to provide adequate bandwidth access to schools.

- **Connectivity gaps in schools:** According to the U.S. Department of Education, the percentage of classrooms that have Internet increased 84 percent from 1996 to 2008.[vi] However, only 20 percent of educators say their school's Internet connection can support their teaching needs.[vii] According to the nonprofit organization Education SuperHighway, 70 percent of schools lack the broadband speeds to access the Internet and approximately "40 million students are waiting for equal access to compelling curricula and great teachers." [viii] There is widespread agreement that classrooms need at least 100 kpbs per student to support digital learning now; this bandwidth could increase to 2 mbps per student by 2018. [ix] Further, students who are allowed to access digital learning programs outside of school will also need to have proper broadband access. If the E-Rate program is not modified to support higher Internet speeds in schools and homes, students will not be able to take advantage of the specific digital technology the program was designed to facilitate.

- **Inequity in schools:** There is widespread agreement that educational technology can make learning more equitable by increasing student access to a wide array of courses that would not otherwise have been offered (i.e., Advanced Placement, higher-level science or mathematics, certain foreign language courses). Online courses may be particularly helpful for schools in lower-income, rural, and tribal areas that have persistent problems attracting highly qualified educators to teach courses. Unfortunately, a recent report from the Pew Research Center indicates that "teachers of the lowest income students are more than twice as likely as teachers of the highest income students (56 percent versus 21 percent) to say that students' access to digital technologies is a 'major challenge' to incorporating more digital tools into their teaching." [x] Similarly, the FCC reports that rural Americans are "more than 13 times more likely to lack access to broadband than in non-rural areas." [xi] And, only 10 percent of families living on tribal lands have access to the Internet.[xii] The E-Rate program needs

to take more precise action to address the digital divide for low-income, rural, and tribal schools. If the E-Rate program doesn't prioritize schools in these areas, inequity for these already underserved students will only be exacerbated.

- **Common Core state standards:** During the 2014-2015 school year, the 45 states and District of Columbia that signed on to the Common Core Curriculum will test all their students online. In order to administer the Common Core Curriculum assessments, the E-Rate program will need to ensure that all have adequate broadband bandwidth capacity.
- **Inefficient processes and participation barriers:** According to a 2010 GAO report, applicants who wish to apply for E-Rate discounts must undergo a 39-step process and read through a 700-page guidance document. [xiii] Many eligible districts do not apply for E-Rate discounts because they are intimidated by the process; others are denied funding or fail to collect money owed to them because they failed to fill out forms correctly.[xiv] Further, data indicate that a large proportion of E-Rate dollars is spent on outdated products and services (i.e., beepers, pagers, and directory assistance) that are not needed for current education technologies. More strategic efforts are needed to streamline the application process and ensure that districts and schools that need funds receive them in a timely manner.

Sample Districts

Many districts today still struggle with connectivity issues. The issues remain the same: availability to fiber, resources, and funding. These districts are both urban and rural. "Unlike many districts struggling to access fiber, New York City is neither rural or remote. But as of December 5 (2013), 5 percent of the buildings operated by the 1.1 million-student district still lacked a high-speed Internet connection via fiber-optic cable.[xv]

The Iowa STEM Monitoring Project 2012-2013 Summary Report states that in Iowa rural school districts struggle to get access to STEM teachers and programs compared to their counterparts. GIS mapping shows there is an uneven distribution of teachers with math and science endorsements between urban and rural areas of the state. Access to these teachers can be improved with increased broadband for rural districts. The 200-page report was compiled by researchers at the University of Northern Iowa and Iowa State University for the Governor's STEM Advisory Council.[xvi]

According to Funds for Learning's John Harrington, "the E-Rate program's current funding cap and 1998-era priority rules are producing an odd consequence: the current system prioritizes funding for applicants based on their technology choices, rather than their financial need or location. Take rural schools for example. There are 11.77 million students listed on *E-Rate applications from rural schools*. In FY2013, $524 million in Priority 1 service discounts was requested to support these students. Rural schools also requested $271 million in internal connections discounts to connect their students to their Priority 1 services. Yet, under the current E-Rate funding cap and priority system, those internal connections funding requests are likely to be denied. Without adequate internal connections infrastructure, rural schools will struggle to provide their students with adequate Internet connectivity." [xvii]

Conclusion

Enhancing the E-Rate program is critical to meeting twenty-first century educational demands. In businesses, government agencies, hospitals, and even homes, high speed Internet and adequate levels of technology infrastructure is akin to electricity and running water. Certainly none of these entities would be able to open their doors every day and function properly without it.

So how can it be acceptable for schools, responsible for educating the workforce of the future, to have anything less? The resources students need, the information they must master, and the online tools they are accustomed to using in every other part of their lives are not readily available in our schools. While the initial purpose of E-Rate was to provide Internet access to schools, E-Rate should be expanded to encompass the broader needs of schools today. This should include updating Priority 1 and 2 requests to include options for hardware, virtual instruction resources for students, and web-based professional development for district staff.

If we demand accountability for schools and expect our students to compete globally, we must invest in the proper tools to help students succeed, starting with the basic online infrastructure that is so fundamental it is taken for granted across all other industries and business.

The E-Rate program has played a critical role in bringing Internet access to students across the country, but the program needs to be modernized to reflect the current needs of schools across the country.

The program now must be modernized to 1) meet the growing demand for online and blended learning; 2) address connectivity gaps in schools; 3) combat inequity in schools; 4) meet Common Core standards and testing requirements; 5) address the changes in technology needs, and 6) ensure all qualified schools and districts can take advantage of the program. This will require focusing funding on supporting broadband and next-generation technology. E-Rate needs to reflect current applications of technology and use of the Internet in the preparation of today's global citizens.

[i] U.S. Government Accountability Office (September 2010). *Telecommunications: FCC Should Assess the Design of the E-Rate Program's Internal Control Structure*. *(GAO-10-908).* Washington, D.C.: U.S. Government Accountability Office. Retrieved from *http://www.gao.gov/products/GAO-10-908*.[ii] Aud, S., Hussar, W., Johnson, F., Kena, G., Roth, E., Manning, E., Wang, X., and Zhang, J. (2012). *The Condition of Education 2012 (NCES 2012-045)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics. Retrieved from *http://nces.ed.gov./pubsearch*.

[iii] Cavanaugh, C. (2013). "Student achievement in elementary and high school." In M.G. Moore (Ed.). *Handbook of distance education*, 3rd ed. (170-184). New York: Routledge.

[iv] Digital Learning Now. (2013). "E-Rate Policy Brief." Retrieved from *http://www.digitallearningnow.com/blog/education-coalition-pushes-E-Rate-reform/*.

[v] Florida House of Representatives CS/CS/HB7197 (2011) . Section 6. Paragraph (c) to subsection (2) of 893 section 1003.428 Retrieved from *http://www.myfloridahouse.gov/Sections/Documents/loaddoc.aspx?FileName=_h7197er.docx&DocumentType=Bill&BillNumber=7197&Session=2011.*

[vi] U.S. Department of Education, National Center for Education Statistics (2012), "Table 120: Number and Internet access of instructional computers and rooms in public schools, by selected school characteristics: Selected Years, 1995 through 2008." In *Digest of Education Statistics*, 2012 ed. U.S. Department of Education, National Center for Education Statistics. Retrieved from *http://nces.ed.gov/programs/digest/d12/tables/dt12_120.asp?referrer=report*.

[vii] The White House, Office of the Press Secretary. "President Obama unveils ConnectED initiative to bring America's students into digital age." Retrieved from *http://www.whitehouse.gov/the-press-office/2013/06/06/president-obama-unveils-connected-initiative-bring-america-s-students-di*.

[viii] Education SuperHighway. "The Opportunity." Retrieved from *http://www.educationsuperhighway.org/the-opportunity.html*.

[ix] See Reply Comments filed in Federal Communications Commission WC Docket No. 13-184 from Amplify Education, AT&T, Bill and Melinda Gates Foundation, Cisco Systems, EducationSuperHighway, Hewlett-Packard Company, McGraw-Hill Education, Software & Information Industry Association, and Verizon.

[x] Purcell, K., Heaps, A., Buchanan, J., and Friedrich, L. (2012). "How teachers are using technology at home and in their classrooms." Washington, D.C.: Pew Research Center. Retrieved from *http://www.pewInternet.org/Reports/2013/Teachers-and-technology.aspx*.

[xi] Federal Communications Commission. (2012). *Eighth Broadband Progress Report* (GN Docket No. 11-121). Retrieved from *http://www.fcc.gov/reports/eighth-broadband-progress-report*.

[xii] Morris, T. L., and Meinrath, S .D (2009). "New Media, Technology and Internet Use in Indian Country: Quantitative and Qualitative Analyses." Washington, D.C.: Native Public Media and New American Foundation: Open Technology Initiative. Retrieved from *www.atalm.org/sites/.../NPM-NAF_New_Media_Study_2009_small.pdf*.

[xiii] U.S. Government Accountability Office (September 2010). *Telecommunications: FCC Should Assess the Design of the E-Rate Program's Internal Control Structure*. *(GAO-10-908).* Washington, D.C.: U.S. Government Accountability Office. Retrieved from *http://www.gao.gov/products/GAO-10-908*.

[xiv] U.S. Government Accountability Office (2009). *Telecommunications: Long-Term Strategic Vision Would Help Ensure Targeting of E-Rate Funds to Highest-Priority Uses*. *(GAO-09-253).* Washington, D.C.: U.S. Government Accountability Office. Retrieved from *http://www.gao.gov/new.items/d09253.pdf*.

[xv] Herold, Benjamin, (2014). "3 Districts Making Progess on High-Speed Internet." Edweek. 2014. Retrieved from *http://www.edweek.org/ew/articles/2014/01/15/17fiberside.h33.html?cmp=ENL-EU-NEWS1.*

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[xvii] Harrington, John, "Protecting Rural Schools" Retrieved January 17,2014 from http://www.fundsforlearning.com/blog/2013/12/protecting-rural-schools.

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